

Figure 4

Powered Air-Purifying Respirators

(Photo courtesy of OSHA)



Tight-Fitting Respirator Facepieces

Tight-fitting air-purifying respirators are available with half-face or full-face respirator facepieces. Half-face respirator facepieces cover only the mouth and nose and provide a lower level of protection compared to a full-face facepiece that covers the nose, mouth, and the eyes and face. A full-face respirator is especially useful under conditions where air contaminants are present that can cause eye irritation.

Limitations of Air-Purifying Respirators

Caution! Do not use an air-purifying respirator in an IDLH atmosphere. Because an air-purifying respirator filters ambient air, it does not protect the wearer against an oxygen-deficient atmosphere. In addition, an APR offers minimal or no protection when levels of air contaminants exceed the rated capacities (maximum use concentration, MUC) of particulate filters, cartridges or canisters.

Atmosphere-Supplying (Supplied-Air) Respirators

Respirators that are atmosphere supplying, also known as supplied-air respirators (SAR), use an independent source of breathing quality air provided through a hose connected to the respirator facepiece. The source of breathing air can be supplied from either a compressed air cylinder or an air compressor designed to provide breathing grade air. (Breathing air quality is discussed in Section 9 of this industry guide.)

As with PAPRs, the respirator facepiece for supplied air respirators can be loose-fitting or tight fitting, depending upon the application for which it is worn and the level of protection necessary. Supplied-air respirators that are equipped with loose-fitting respiratory inlet coverings (facepieces) can accommodate facial hair and can be used for a number of applications, including abrasive blasting,⁶ but provide less respiratory protection than a tight-fitting facepiece.

6. Respirators used for protection during abrasive blasting operations must be approved by NIOSH for that purpose.